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R/S

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/301,989	04/29/99	LAOR	H 4261500150

025231
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PM82/0221

EXAMINER	
MUN, K	
ART UNIT	PAPER NUMBER
3641	11

DATE MAILED: 02/21/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)
	09/301,989	LAOR, HERZEL
	Examiner	Art Unit
	K. Kevin Mun	3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 December 2000.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-58 is/are pending in the application.
 4a) Of the above claim(s) 5-10, 13, 14, 17-47, 56 and 58 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-4, 11, 12, 15, 16, 48-55 and 57 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are objected to by the Examiner.
 11) The proposed drawing correction filed on 08 December 2000 is: a) approved b) disapproved.
 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) Notice of References Cited (PTO-892) 18) Interview Summary (PTO-413) Paper No(s). _____.
 16) Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) Notice of Informal Patent Application (PTO-152)
 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 20) Other: _____

DETAILED ACTION

1. Claims 5-10, 13-14, 17-47, 56, and 58 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected apparatus and species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 12/8/2000 have been approved.

Specification

4. The following is a quotation of 37 CFR 1.71(a)-(c):
- (a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.
- (b) The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor of carrying out his invention must be set forth.
- (c) In the case of an improvement, the specification must particularly point out the part or parts of the process, machine, manufacture, or composition of matter to which the improvement relates, and the description should be confined to the specific improvement and to such parts as necessarily cooperate with it or as may be necessary to a complete understanding or description of it.

5. The specification is objected to under 37 CFR 1.71 because of the following deficiencies, failing to provide an adequate written description of the invention and to teach how to make and/or use the invention:

- There is neither adequate description nor enabling disclosure of the parameters of a specific operative embodiment of the invention, including exact composition of the Bose-Einstein condensate, size and dimension of the reaction chamber, mass of the condensate, temperature and pressure of the reaction chamber, beam intensity, etc.
- There is neither adequate description nor enabling disclosure as to how and in what manner the actual fusion reactions take place. According to the specification, it appears that, if a laser beam with sufficient energy and high frequency is directed to the Bose-Einstein condensate, the alleged fusion reactions automatically take place by fusing among the condensate particles. However, there is no reputable evidence of record to support this allegation. Furthermore, the alleged fusion reaction without any means of confinement effect is not believed by practitioners in the art to be operable as disclosed.
- There is neither adequate description nor enabling disclosure as to how and in what manner the Bose-Einstein Condensate is produced (especially Bose-Einstein Condensates other than ^4_2He) and introduced into the reaction chamber. In case the Bose-Einstein Condensate is produced within the reaction chamber, the disclosure is insufficient and not enabling as to how and in what manner the

condensate is produced. As to the process of introducing the condensate into the chamber (e.g. into plastic receptacle), the disclosure is insufficient and not clear to determine whether the process is continuous or batch mode, as this information being essential and critical to the practice of the invention.

- There is neither adequate description nor enabling disclosure as to what material or medium occupies the reaction chamber. There must be a medium in the reaction chamber to absorb the heat generated from the fusion.
- There is neither adequate description nor enabling disclosure as to how and in what manner the harnessing device can sufficiently remove such intense heat generated by the alleged fusion reaction. It is to be noted that extracting energy produced by fusion reaction in a controlled manner is one of the most difficult tasks in fusion research and development. Neither specific methods nor structural details of the harnessing devices are sufficiently disclosed.
- There is neither adequate description nor enabling disclosure as to how and in what manner the plastic receptacle maintains its structural integrity without melting from the intense heat generated by the alleged fusion reaction.

6. Applicant's arguments filed on 12/8/2000 have been fully considered but they are not persuasive. Applicant contends the examiner's objection and corresponding claim rejection based on the description and enablement requirements are improper. With regards to the description issue, applicant contends by citing a court decision, e.g. *In re Koller*, 613 F2nd 819, 823-24, 204 USPQ702, 706 (CCPA 1980), which states "original claims constitute their own description." With regards to the enablement issue,

applicant contends by alleging that the examiner has failed to establish a prima facie case of non-enablement. In response to applicant's first allegation, the examiner cannot fully find the relevance between the cited court decision and the present issues under consideration. *In re Koller* states "original claims constitute their own description," which teaches that the claims can be considered as their own description. This teaching becomes relevant only in circumstances where the original claims meet the requirement of adequate written description. In the present instance, the examiner's objections and subsequent rejections are made in view of the specification and the claims as a whole: That is, neither the specification nor the claim suffice the adequate written description requirement. Furthermore, as set forth in MPEP Section 2163.04, the examiner provided, as the initial burden of presenting evidence or reasons, his reasons why persons skilled in the art would not have recognized the applicant's description of claimed limitation in the application as filed. However, applicant has failed to discuss or respond to any of the issues or reasons set forth by the examiner in Section 6 and, subsequently, in Section 9 of the last Office Action filed on 7/5/2000. In response to the applicant's latter allegation that the examiner has failed to establish a prima facie case of non-enablement, the examiner believes that he, in the last Office Action filed 7/5/2000, has met the initial burden on the examiner to establish a reasonable basis to question the enablement for the claimed invention, as to why the scope of the claimed invention is not adequately enabled by the disclosure. It has been held in the court that "Assuming that sufficient reason for such doubt exists, a rejection for failure to teach how to make and/or use will be proper on that basis." *In re Marzocchi*, 439 F.2d

220,224, 169 USPQ 367, 370 (CCPA 1971). Furthermore, applicant has failed to discuss or respond to any of the issues or reasons set forth by the examiner in Section 6 and, subsequently, in Section 9 of the last Office Action filed on 7/5/2000.

7. In response to applicant's allegation "scientists working in fields relating to Bose-Einstein Condensates (BEC) and high-energy lasers have substantial knowledge that would enable such scientists to practice the claimed invention based on the teachings of the present specification," it is the examiner's position that the technical areas of fusion research and BEC are distinctively different from one another, wherein the current state-of-the-art fusion research focuses on high-temperature plasma confined by various means and the BEC, although known, has found no realistic applications thus far. Apparently, one of ordinary skill in the fusion art had not and would not know how to utilize the BEC to achieve fusion energy without undue experimentation for the reasons set forth in Section 6 and 9 in the last Office Action. Similarly, one of ordinarily in the BEC art had not and would not know how to generate fusion reactions from the BEC without undue experimentation.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-4, 11-12, 15-16, 48-55, and 57 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in

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such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, for the reasons set forth above in Sections 5-7 of this Office Action and reasons set forth more fully below.

There is no reputable evidence of record to support any allegations or claims that the invention involves nuclear fusion, nor that any allegations or claims of "energy" due to nuclear reactions are valid and reproducible, nor that the invention as disclosed is capable of operating as indicated and capable of providing a useful output.

Applicant's specification is replete with assumptions and speculations as to how and in what manner the applicant can induce nuclear fusion by forming a "cold" plasma (e.g. Bose-Einstein condensate). See pages 7+. However, applicant has presented no reputable factual evidence to support his assumptions and speculations. The disclosure is considered insufficient without a reputable appraisal on the degree of validity of the various assumptions and speculations as well as a factual basis for each of assumptions and speculations.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 51-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Regarding claims 51 and 52, the word "energy" renders the claim indefinite because it is unclear as to what type or level of "energy" is encompassed by the term.

Claim Rejections - 35 USC § 101

13. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

14. Claims 1-4, 11-12, 15-16, 48-55, and 57 are rejected under 35 U.S.C. 101

because the disclosed invention is inoperative and therefore lacks utility.

The reasons for that the invention as disclosed is inoperative are the same as the reasons set forth above in Sections 6 and 9 of this Office Action and are accordingly incorporated herein.

15. There is no convincing evidence that the phenomena attributed to "Bose-Einstein condensate fusion" would produce useful sources of energy. Note in this respect, website <http://www.cs.cmu.edu/~dst/ATG/index.html>, more specifically page 6, alleges that the work by American Technologies Group (ATEG) (who has attempted but failed to patent BEC fusion on several occasions) on BASER was a scam (see also Declaration of Dr. Shui-Yin Lo to USPTO dated 1/21/1998). Since there is no reputable evidence of record to indicate that the invention has been reduced to the point of providing in current available form, e.g. an operative fusion system, the invention is not considered as meeting the requirements of 35 U.S.C. 101 in being "useful."

16. Applicant at best has set forth what may be considered as a concept or an object of scientific research. However, it has been held that such does not present a utility within the meaning of 35 U.S.C. 101. See *Brenner v. Manson*, 148 USPQ 689.

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17. Additionally, it is well established that where, as here, the utility of the claimed invention is based upon allegations that border on the incredible or allegations that would not be readily accepted by a substantial portion of the scientific community, sufficient substantiating evidence of operability must be submitted by the applicant.

Note In re Houghton, 167 USPQ 687 (CCPA 1970); In re Ferens, 163 USPQ 609 (CCPA 1969); Puharich v. Brenner, 162 USPQ 136 (CA DC 1969); In re Pottier, 153 USPQ 407 (CCPA 1967); In re Ruskin, 148 USPQ 221 (CCPA 1966); In re Citron, 139 USPQ 516 (CCPA 1963); and In re Novak, 134 USPQ 335 (CCPA 1962).

18. Applicant's arguments filed on 12/8/2000 have been fully considered but they are not persuasive. Applicant alleges that the examiner has failed to establish a *prima facie* case of non-utility because, in his view, the invention conforms to the known laws of physics and chemistry and because the examiner does not and cannot reasonably question that fusion energy comports with the laws of physics. It is to be noted that it is not the examiner's position to question the theoretical basis of fusion energy. As matter of fact, the examiner is well aware of the presence of fusion reactions in both theoretical and experimental basis. Instead, it is the examiner's position that the applicant's claimed alleged fusion reaction by BEC is under consideration as being inoperative and therefore lacking utility: That is the claimed applicant's fusion system is not a conventional fusion system and there is no support or convincing evidence in the record that such fusion reaction occurs. Worth mentioning is that the general consensus in the scientific community of state-of-the-art fusion research is there exist certain required conditions in order to achieve fusion reactions, not to mention other unsolved issues of

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controlling the reaction and extracting heats: (1) particle density $> 10^{13} \text{ cm}^{-3}$ in plasma, (2) temperature $> 5 \text{ KeV}$ ($50,000,000^\circ\text{C}$), and (3) confinement time $> 10^{13}/\text{density}$.

However, the applicant's alleged fusion reaction takes place in a "cold" alleged plasma state, which contradicts the present scientific understanding of the fusion phenomenon.

Note also the scientific consensus on "cold fusion." Although the examiner does not believe the applicant's invention is related to "cold fusion" concept, the examiner's approach towards a scientifically unproven alleged phenomenon is somewhat similar to the treatment of "cold fusion" concept. Generation of fusion energy involves more than fusing two particles. If it was that simple, the fusion energy would have been in commercial operations 20 years ago.

19. In response to applicant's allegation that the BASER (e.g. cited by the examiner) is not the subject of the present invention, the alleged BASER technology by Lo involves creating a coherent beam of bosons (super fluid helium) and fusion with deuterons to generate fusion energy, which is the same concept as disclosed by the applicant. The examiner admits that the website <http://www.cs.cmu.edu/~dst/ATG/index.html> provided by the examiner does not explicitly discuss the application of BASER in fusion technology. However, Lo's several patent applications (See Lo, S.-Y. cited in the previous PTO-892 by the examiner) provide sufficient evidence of relevance of the BASER and the fusion application.

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20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

21. Claims 1-4, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by any of Lo (US 4875213), Lo (WO 93/11543), and Lo (WO 93/11543), for the same reason set forth in Section 15 of the last Office Action filed on 7/5/2000.

22. Applicant's arguments filed on 12/8/2000 have been fully considered but they are not persuasive. In response to applicant's allegation that Lo does not disclose subject matter relating to compressing co-located bosons or obtaining energy thereby as claimed, it is to be noted that inertial confinement by laser beam is provided to compress the boson beam.

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 12, 15-16, 48-55, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Lo (US 4875213), Lo (WO 93/11543), or Lo (WO 93/11543), for the reasons set forth in Section 17 of the last Office Action filed on 7/5/2000.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
26. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Kevin Mun whose telephone number is 703-305-1839. The examiner can normally be reached on Tue-Fri 8:00-5:30.
28. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone can be reached on 703-306-4198. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-0285 for After Final communications.
29. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

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K. Kevin Mun, Ph.D.
February 16, 2001

MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER